CLAIMS

What is claimed is:

1. An apparatus combining an optical sensor and a bomb impact assessment system, said apparatus comprising:

means for receiving an optical signal;

means for splitting off a portion of the optical signal from a primary optical path to form a secondary optical path;

a lens in said secondary optical path, said lens comprising a plurality of facets generating a plurality of tertiary optical paths;

means for combining signals from said primary and one or more of said tertiary optical paths;

means for detecting said combined signals; and

means for projecting onto a focal plane array bomb impact assessment data comprising detected signals from one or more of said tertiary optical paths.

2. The apparatus of claim 1 wherein said apparatus comprises a forward looking infrared radar.

3. The apparatus of claim 1 wherein said lens comprises four to eight facets.

4. The apparatus of claim 1 wherein said splitting off means comprises means for splitting off a plurality of wavebands.

5. The apparatus of claim 4 wherein said plurality of wavebands comprise midwave infrared wavebands.

6. The apparatus of claim 5 wherein two of said wavebands fall within approximately 3.5-4.0 μm and 4.5-4.9 μm.

7. The apparatus of claim 1 wherein two or more lens facets are allocated to a single waveband.

8. The apparatus of claim 7 wherein at least two of said two or more lens facets have different aperture sizes.

9. The apparatus of claim 8 additionally comprising means for sampling detected signals from said tertiary optical paths corresponding to said two or more lens facets, thereby permitting saturation analysis of said tertiary optical paths.

10. The apparatus of claim 1 wherein said receiving means comprises a beamsplitter, said splitting off means comprises an optical pick-off mechanism, said lens comprises a collimating and focusing lens, said combining means comprises an optical re-insertion mechanism, said detecting means comprises an integrated detector cooler assembly, and said projecting means operates at a plurality of sampling rates.

11. A method facilitating bomb impact assessment, the method comprising:

receiving an optical signal;

splitting off a portion of the optical signal from a primary optical path to form a secondary optical path;

employing a lens in the secondary optical path, the lens comprising a plurality of facets generating a plurality of tertiary optical paths;

combining signals from the primary and one or more of the tertiary optical paths;

detecting the combined signals; and

projecting onto a focal plane array bomb impact assessment data comprising detected signals from one or more of the tertiary optical paths.

12. The method of claim 11 wherein the method is accomplished in conjunction with a forward looking infrared radar.

13. The method of claim 11 wherein in the employing step the lens comprises four to eight facets.

14. The method of claim 11 wherein splitting off comprises splitting off a plurality of wavebands.

15. The method of claim 14 wherein the plurality of wavebands comprise midwave infrared wavebands.

16. The method of claim 15 wherein two of the wavebands fall within approximately 3.5-4.0 μm and 4.5-4.9 μm.

17. The method of claim 11 wherein in the employing step two or more lens facets are allocated to a single waveband.

18. The method of claim 17 wherein at least two of the two or more lens facets have different aperture sizes.

19. The method of claim 18 additionally comprising the step of sampling detected signals from the tertiary optical paths corresponding to the two or more lens facets, thereby permitting saturation analysis of the tertiary optical paths.

20. The method of claim 11 wherein receiving comprises employing a beamsplitter, splitting off comprises employing an optical pick-off mechanism, the lens comprises a collimating and focusing lens, combining comprises employing an optical re-insertion mechanism, detecting comprises employing an integrated detector cooler assembly, and the projecting step operates at a plurality of sampling rates.